



US005764622A

**United States Patent** [19]

Kawamura et al.

[11] **Patent Number:** 5,764,622[45] **Date of Patent:** Jun. 9, 1998[54] **RECORDING MEDIUM CARTRIDGE AND SIGNAL RECORDING APPARATUS**[75] **Inventors:** Ichiro Kawamura, Osaka; Ryoichi Imanaka; Yoshikazu Goto, both of Hirakata, all of Japan[73] **Assignee:** Matsushita Electric Industrial Co., Ltd., Osaka, Japan[21] **Appl. No.:** 652,053[22] **Filed:** May 23, 1996[30] **Foreign Application Priority Data**May 23, 1995 [JP] Japan ..... 7-123420  
May 17, 1996 [JP] Japan ..... 8-122948[51] **Int. Cl.<sup>6</sup>** ..... G11B 23/03[52] **U.S. Cl.** ..... 369/291; 360/133[58] **Field of Search** ..... 369/289, 290,  
369/291, 292; 360/132, 133, 137; 206/308.1,  
308.2, 308.3, 387.1, 387.11; 220/214, 257,  
258[56] **References Cited****U.S. PATENT DOCUMENTS**

3,990,575 11/1976 Egly et al. .... 206/387.11

4,425,999 1/1984 MacDonald et al. .... 360/133  
4,475,222 10/1984 Egendorf ..... 360/132  
4,617,655 10/1986 Aldenhoven ..... 369/291  
4,755,982 7/1988 Douwes ..... 369/291  
4,805,769 2/1989 Soltis et al. .... 206/308.2  
5,012,380 4/1991 Harissis et al. .... 360/133  
5,093,823 3/1992 Ouwerkerk et al. .... 369/291  
5,150,354 9/1992 Iwata et al. .... 369/291**FOREIGN PATENT DOCUMENTS**

6-12814 1/1994 Japan ..... 206/308.1

**Primary Examiner**—Stuart S. Levy**Assistant Examiner**—David L. Ometz**Attorney, Agent, or Firm**—McDermott, Will & Emery[57] **ABSTRACT**

A cartridge for housing a recording medium therein. The cartridge includes a cartridge body configured such that a signal recording apparatus can record a signal onto the recording medium when the cartridge is loaded in the signal recording apparatus. The cartridge also includes an opening in the cartridge body for removing the recording medium from the cartridge body, and a cover covering the opening. An indicator on the cartridge body indicates whether the cover has ever been opened or removed from the cartridge body.

**5 Claims, 12 Drawing Sheets**